

### ABSTRACT

A semiconductor device such as a buried heterostructure semiconductor laser includes a semiconductor substrate supporting an active region comprised of a multiple quantum well active region and confinement layers having defined gratings and grating overgrowth regions to produce a laser device. The device also includes a current confinement layer including a sequence of doped n-p-n-p semiconductor layers to produce a n-p-n-p blocking structure and a semi-insulating semiconductor material deposited over the n-p-n-p blocking structure.

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